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THE GENESEE FARMER.

SATURDAY, JAN. 9, 1836.

HEDGES.

The scarcity and cost of good materials for fences is likely to become a serious evil in many parts of the country. The great fertility, and the value of our soil, presents so strong an inducement to clear off the primitive forests, that timber lands are fast diminishing before the axe, and timber yearly increasing in value. Young farmers may live to see the day when it will become absolutely necessary to provide some other mode of fencing than that now employed.

The importance of the subject even at the present time is by no means trifling. Perhaps there is nothing more calculated to exhibit this importance, than an estimate of the actual cost of fences. One hundred acres of land, properly divided into fields, would require at least one thousand rods or more than three miles of fencing. This, if of the common rail or worm fence, would certainly cost five or six hundred dollars, at a moderate estimate. If a good post and rail or board fence, it would cost at least one thousand. The cost would of course vary in different parts of the country. According to this estimate, the expense of enclosing all the improved land in the United States, cannot be much less than from *two* to *four thousand millions of dollars;* and when it is considered that most of this has to be renewed after the lapse of every fifteen or twenty years, the vast importance of the subject must be perceived at a glance.

There are various substitutes for timber fences. Well made stone fences, are for ordinary purposes, the best in the world. They are said to last forever. But suitable stone in sufficient quantity are not in most places so easily procured. Much has been said and written on the subject of hedges, and their adaptation to this country, and a great diversity of opinion prevails in relation to their advantages. In consequence of the frequent failures in experiments, many have despaired of ever succeeding with them. But frequent or even general failures, do not establish their inutility; indeed in almost every case, want of success may be attributed to the use either of improper materials, or to improper management, and often to both. As both of these should be well understood, we shall commence with some observations on

THE MATERIALS USED FOR HEDGES.

The employment of *exotic* trees has been one cause of failure. The *privet* or *prim* was many years ago employed to a considerable extent in Pennsylvania and on Long Island, and after continuing many years in a flourishing condition, perished from some unknown causes. In the town of East Hampton in Suffolk county, by the best computation, at least two hundred miles of good *prim* hedge died in the course of two or three years. The *English black thorn* in Southampton was nearly equal to the prim in East Hampton; but it all subsequently died in consequence of the attacks of an insect. In many other places the English thorn has perished after promising well for a few years. There may be parts of the country where it may possibly succeed and continue healthy and vigorous, but its very frequent failures should teach great caution in using it to any extent.

If instead of going to foreign countries for trees, we should employ those found in our own woods and thickets, those which are adapted by nature to our soil and climate, there would be a much greater probability of success. We accordingly find that the American thorns, when employed, have not, in general, been subjected to the fatal consequences which have attended the exotic thorns. But even in these there is a great difference, and some appear liable to destruction. The Washington or Virginia thorn (*Cratægus cordata*) has been looked upon as better than any other for hedges, and was denominated by Thomas Main of Georgetown (D. C.) who cultivated it extensively,—by way of distinction, the *American hedge-thorn.* It has also been employed extensively in other places, and much recommended; and an additional advantage it possesses over other American thorns, is that it grows readily from seed after the exposure of a single winter. But many of the old hedges which it constitutes have already begun to fail in consequence of the attacks of insects at the roots. The vigor and healthiness of trees are often injured by improper management, and they then become liable to the attacks of insects invited by diminished vigor and disease. If this is not the case with the Washington thorn, it must become comparatively useless as a hedge tree in all those parts of the country where it is found liable to such attacks. The *cock-spur* or Newcastle thorn (C. crus-galli) possesses all the advantages of the Washington thorn, except in the ready germination of its seeds, eighteen months of preparation being required before they vegetate. In some other respects it is superior, particularly in its uniformly vigorous growth, and in its not being liable to any known disease or the attacks of any enemy. In the third volume of the Transactions of the Philadelphia Agricultural Society, page 10, Judge Peters, speaking of a visit to M'Mahon's gardens, says of the Newcastle thorn, "I never beheld a more verdant, vigorous plant. The contrast with the other thorns was striking and captivating. It has every valuable attribute of other thorns. It superadds the capacity of resisting the maladies, and thriving amidst the misfortunes, to which the others are subject." In the same volume, page 16, William Neill says, "My hedges are in general handsome, but I have no thorn I value so highly as the American cockspur. It will make a fence which nothing can get through." Other accounts concur with these. There are several other species of American thorn, but they are all considered inferior to the above. *Cratægus punctata*, the most common species in Western New-York, is not always armed with thorns, and we have never heard of its being made use of in hedging. *Cratægus coccinea*, which is also common, but less so than the last named, is thorny, but the thorns are much smaller and less numerous than in the cockspur thorn, and its growth is not so thrifty, nor the tree so healthy.

Most of the species of American thorn are liable to run into varieties; hence there is great difficulty in determining their names without much care and examination; but as *C. crus-galli* (or cockspur) is likely to become of importance on account of its superior excellence in hedging, and is at the same time more distinctly characterized than some others, we will give a brief description. It is a small tree, throwing out numerous branches on all sides horizontally, which are thickly armed with long, slightly curved thorns. Leaves from two to three inches long, rounded and unequally serrate at the apex, (or upper end,) and tapering gradually in a wedge form, towards the footstalk; very smooth, and shining upon the upper surface. Flowers small, white; generally with two styles, often with but one. Berries small, red, mostly one-seeded.* It is not an uncommon tree in Western New-York, though more rare than some of the other species. From the thick and shining leaves, and their continuing late in Autumn, they resemble in some degree the leaves of evergreens. This, and the small one-seeded berry will in general serve readily to distinguish this species from all others.

Another tree strongly recommend for hedges is the American crab, (Pyrus coronaria) not uncommon in woods and thickets. It appears never to have been tried to any extent, consequently its advantages are yet doubtful; but if it is not liable to the attacks of the borer and catterpillar, as the common apple is, it will probably prove valuable, as its branches are numerous and thorny. And in the beauty and fragrance of its flowers it is almost unrivaled, a consideration not to be overlooked by the husbandman of taste.

The Buckthorn (*Rhamnus catharticus*) is recommended by J. Lowel and E. H. Derby as the best plant for hedges in New England. The latter says, "I have tried this plant for six years. It is hardy, and rapid in its growth, of impenetrable thickness, and so far as that extent of experiment enables me to judge, not subject to

*The specific character is,—"Thorny; leaves obovate—cuneate, subsessile, shining, coriaceous; corymbs compound; segments of the calyx lanceolate, sub-serrate; flowers digynous; fruit small, mostly one-seeded."

any disease, nor the visitation of any insect whatever." We have seen this tree growing in the western part of this state, and although remarkably branching and dense in its growth, we doubt if it would form a sufficient barrier for strong and unruly cattle, especially as it is almost wholly unfurnished with thorns. It requires at least longer and more general trial.

The Honey Locust (*Gleditschia triacanthos*) has attracted much attention as a hedge tree, on account of its numerous, branching, and terrific thorns. But as it attains considerable size, reaching often to the height of forty or fifty feet, and is very loose in its growth, it is not well adapted for hedges on this account. Though perhaps thus rendered useless for farms, it may still be of great utility in forming enclosures for gardens, in addition to an ordinary board or picket fence, on account of the formidable barrier its thorns must present to plunderers. There is considerel difference in the trees, some being much more thorny than others,—while the trunks of some trees are smooth and unarmed, those of others are nearly covered with the bristling thorns often seven or eight inches long and branching in every direction. The thorny varieties only should therefore be employed for hedges.

The growth of no plant can be healthy and vigorous unless it has sufficient space. Thus if Indian corn is planted too thickly together, every plant shows a stunted and sickly aspect. And it is not improbable that much of the failure in hedges may be from the same cause. Hence it is especially necessary that when trees of large growth are employed, they should not be placed too closely together. It has therefore been proposed to plant trees of honey locust at a distance of several feet, and train the branches in two opposite directions, as espaliers are trained. In this way, the trees would not be crowded, the lateral branches taking the place of intermediate trees; and frequent clipping, which has been found so injurious to them, would be unnecessary. A hedge of honey locust, thus managed, might serve as an excellent protection for a fruit garden.

The common or yellow locust (*Robinia pseudacacia*) has also been proposed for hedges, but it has little to recommend it, and much to render it decidedly improper. It is a large tree, of loose growth, thornless, (being only furnished with prickles,) and liable to send up innumerable shoots from the roots, which would render it troublesome.

Different species of Pinus (comprising the pines, firs, spruce, larch and hemlock,) have been strongly recommended. These would doubtless form hedges of remarkable beauty, and might answer for merely ornamental purposes, but it is extremely doubtful if they could be rendered sufficiently strong for general use. They possess the advantage however of being very rarely attacked by insects, nor by cattle.

The Hornbeam or swamp beech (*Carpinus americana*) is a small tree, very hardy, and therefore proposed for hedges. It is entirely without thorns or prickles. We are not aware that it has ever been employed as such, although the European species is extensively used in Germany. If it would bear interlacing of the branches, and continue vigorous without cutting down, it would form a strong hedge. Its adaptation to this purpose can only be proved by trial.

The sweet briar (*Rosa rubiginosa*) forms a beautiful hedge, but not of sufficient strength for opposing cattle. It is often retarded in its vigor, and sometimes dies, in consequence of being crowded too thickly together. The Detroit rose (*R. rubifolia*) would form one of still greater beauty if trained upon a proper support while young; but its utility is only hypothetical.

There are several other trees and shrubs which are occasionally proposed, such as elm, willow, prickly ash, barberry, &c. whose merits are very doubtful in theory, and not supported by practice of any duration or extent.

As a general rule, in judging of the adaptation of plants for this purpose, they should be small trees, (not more than 12 or fifteen feet high,) in order the better to bear crowding together; of dense growth; not spreading by the roots; not subject to the attacks of insects; and the branches of sufficient size to prevent, by their strength, the possibility of cattle forcing themselves through. But there are so many unforeseen difficulties to contend with, that no plant should be adopted with confidence until it has been proved by long and extensive trial under judicious management. Experience and observation combine in giving the preference to the American cockspur thorn, above all other plants, no formidable difficulty having yet appeared against it. There is another plant however, which may yet prove on the whole fully equal to it. This is the *red cedar*. (*Juniperus virginiana.*) Although this has been but little used as hedges, yet the fact that it has continued flourishing from time immemorial in impenetrable *natural* hedges, is a formidable argument in its favor. The only known objection is that it causes injury to other trees in its vicinity, supposed by attracting insects, although uninjured itself by them. If this should be generally the case, it could only be employed on farms, remote from gardens and orchards.

(To be continued.)

Velocity of Water-Wheels in the Night.

Popular notions must always be a subject of curiosity and interest to philosophical inquirers, whether these notions are founded on observation, or confounded with superstition; and we are not aware that any popular notion is more extensively diffused among millers (though many of them may not believe in it,) than that which ascribes a greater velocity in the night than in the day, to a water-wheel under the same head. Why there should be any difference, none of the believers in this doctrine have even been able satisfactorily to explain. To argue against it has been futile, because early prejudice was stronger than the powers of reason; and therefore no other way remained that could prove effectual, but to bring it to the test of experiment. For this labor we are indebted to Professor Cleaveland. His statement, which follows, is contained in a letter to Professor Silliman, and published in the American Journal of Science and the Arts.

"In a former letter, I mentioned the opinion existing in this part of the country, that saw-mills move faster during the night than the day. The explanation usually given by the workmen is, that the air becomes heavier after sunset.

"I selected a fine day in August, and requested that all the mill-gates might remain stationary for twelve hours. At 2 o'clock P. M., I suspended a Barometer in the mill; the pressure of the atmosphere was equal to 30.19 inches; the temperature of the water just before it passed the mill-gate was 72° Fahr. The log was then detached from the saw, and the number of revolutions of the wheel, being repeatedly counted by different persons, was 96 in a minute. At midnight I again visited the same mill. The Barometer stood at 30.26 inches, the *pressure* of the atmosphere having *increased* seven hundredths of an inch. The temperature of the water was 72°, the same as at the preceding observation, although it had been a little higher during the afternoon. The log being detached as before, the wheel was found to revolve precisely 96 times in a minute, showing the same velocity as at the preceding noon. The depth of the water was the same during both experiments. The workmen were satisfied that the result of the experiment was correct, but still they seemed to believe that it would be different in a cloudy night."

Increasing Green-House Shrubs by Cuttings.

It is a circumstance well known to the propagators of Green-House trees and shrubs, that many species, like the Willow or the Lombardy Poplar, will grow from cuttings,—though a different kind of management is required. Pure white sand, free from all combinations of iron, or other metallic oxides, is preferred. Into this when wet and placed in a shallow vessel, the cuttings are thrust, having first had all their leaves removed except one or more near the top. Why cuttings root more freely in wet sand than in common loam, no author that we have read, has explained; yet the fact is incontrovertible; and it has also been found that cuttings which stand touching the side of a pot filled with garden soil, take root sooner than such as are placed in the middle of the vessel and surrounded by compact earth. That the *air* can have more access in the former cases, is evident.

Over the cuttings a hand-glass closely shuts down; and it is not uncommon for amateurs who wish to propagate a plant or two for themselves, to employ glass tumblers for the same purpose. The result is a more equal temperature, while the moisture is prevented from evaporating. Plants from hot climates however, will require a higher and more regular heat, than frequently occurs in our summers; and the vessel in no case should be exposed to the sun,—for the calorific rays would penetrate the glass, so that the heat would soon accumulate, and the plants be literally *scalded*. Accidents of this kind sometimes occur in hot beds, when the

sashes having been closed at night, are forgotten in the morning.

In order to afford plenty of light to the plants, and yet exclude the *direct* rays of the sun, the glass of hot-houses is sometimes *white-washed.*

We have made these remarks for the purpose of introducing a method of managing cuttings, which may be useful to some of our readers. It is copied from the Edinburgh Quarterly Journal of Agriculture:

"Sweet directs sand—that is, pure silver sand—to strike in; but I always think it best to fill the pots with the proper soil. Let each pot be well drained with pot-sherds; then *with a round stick press a hole down to these sherds; pour in a very little silver sand, then place the cutting in the hole, so as to touch the drainage; fill the hole with sand, and give a little water to fix the cutting. The hole need not be above double the diameter of the cutting, and that being surrounded by sand, its roots can be excited, and yet be able to push at once into their proper bed;* a little heat will be required to strike the cuttings."

On Pruning the Isabella Vine.

For several years past, we have neglected to prune our Isabella vines, not through choice but a seeming necessity—that is because it was not convenient at the proper time; and as they bore abundantly, and the grapes were very free from mildew, we concluded that they were doing quite as well without pruning. We are now convinced of our mistake. Some straggling stems had wandered away and climbed the fence, where they have borne fruit of a superior quality; and which has ripened altogether better than the crowded bunches on the trellis. We intend to profit by this discovery.

From the Farmer's Register.

On Obtaining New and Improved Varieties of Grain by Crossing.

In sending my monied contribution to the *Farmer's Register*, which I am sure you will consider the best evidence that I could offer of its merits, I beg leave, very briefly, to suggest a few thoughts on the subject of seed corn. I believe, then, that there is but one genus of wheat, and one of maize, or Indian corn—and that all of the varieties of either, known to me, are the results of climate, culture, seasons, soil, &c. &c., and I believe, that by the agency of man, these results may be still further diversified, and made subservient to his good. By the agency of man, in the simple act of selecting from existing varieties of wheat, the agricultural community have been furnished with *that* called *the Lawler*, generally admitted to be less liable to injury by the Hessian fly, than any other known variety—and from the fact, as I believe, that its lower leaves, commonly called the *boot*, do not adhere closely to the stalk; but like the same leaves on rye, fade as the stalks begin to form, leaving any deposite of eggs which would have been sustained to the injury of the stalk, by a gentle pressure of the boot, to perish for the want of that pressure. But while the Lawler wheat has the admitted quality of being less liable to injury by the fly than any other known variety, it is cultivated reluctantly, from a belief that it is less productive in grain than some other varieties. Now, reasoning from analogy, and not doubting the fact, that by means of judicious crosses alone, the English breeders have been enabled to create new species of that stock, combing the best qualities of several varieties—why not expect like results from like means, if made to operate on wheat or Indian corn? For instance, we desire a kind of wheat that shall unite the qualities, say of the blue stem and Lawler—is it not very reasonable to suppose, that from the seed of those varieties promiscuously grown in the same field, a stalk would be found here and there, exhibiting the loose boot of the Lawler, and the many grained head of the blue stem? If yea, my theory for creating a new variety of wheat is established—and the world is welcome to it, without a charge of *patent fees.* That which, in my opinion, is only probable as to wheat, I have no doubt is true in relation to Indian corn, for every body knows (or may know by a single experiment) that any two or more varieties of Indian corn, when promiscuously grown in the same field, mix freely and extensively, combining in the product the qualities of the parent seed, more or less equally as it may happen: thus affording the planter of this invaluable grain, by the easiest means imaginable, an opportunity of fashioning his corn to his own fancy. And yet how few for that consideration, or the still greater of adding to the contents of their crib or their purse, have ever made an effort to improve their corn? As exceptions to a negligence so general, I consider it my duty to say, that there are two gentlemen in this county that have made very laudable efforts to improve their corn by means of a careful annual selection of seed. The fancy of one led him to desire that *his corn* should excel in weight, and making his selections with that view, but only from his own crops, has brought it, as I am well assured, to the unusual standard of upwards of sixty pounds to the bushel, being about five pounds heavier than mine, which I would reluctantly compare this improved corn with my own, because I have rated below the average of the county. I have believed that both are from the same variety, as it existed twenty years ago, proving most conclusively what may be done, if we would only *try* to do it.

The other gentleman, whose efforts to improve his corn are so commendable, seems to have experimented more with a view to quantity by measure than by pounds; and instead of selecting for seed such ears as he would like his next crop to have, prefers taking the upper ears of stalks bearing two or more ears—and he appears very confident, that this mode of selecting seed, continued for say the last twenty years, has given him a species of corn which hardly ever fails to have two ears to the stalk—and that his crops have been greatly increased since he adopted it for cultivation.

Rockbridge, Nov. 28, 1834.

From the New Hampshire Sentinel.

Mr. Editor,—I have been cutivating a piece of Meadow or swamp land of about six acres, and have often been inquired of respecting the method of cultivation, and expense, what the crops were, profits, &c. and if you think the following worth a place in your paper you are at liberty to print it.

The swamp alluded to, when I bought my farm eighteen years ago, had been partly cleared, and was very wet, owing to the small brook that passed through it being filled up with brush, &c. It produced some joint grass; but principally flags, hard hack, and moss. I first commenced by opening the brook, which drained it and killed all the flags and nearly all the grass; I then cut a ditch round a piece of about eighty square rods, cut off all the stumps and the most prominent bunches of moss, and after it was frozen, carted on two hundred and fifty loads of gravel, and levelled it; carted on ten loads of fall manure, and in the spring following, spread it, and sowed on oats, and grass seed. I had a good crop of oats, and the following season it was estimated by good judges, that we had twenty-five hundred of hay. The next year, I encircled about half an acre more with a broad ditch, cut the turf and moss into squares of twenty inches diameter each, and turned it over with a long prong hook, took out all the stumps and roots, leaving it as level as possible, and carted on two hundred loads of gravel, and eleven of manure. In the spring following sowed on oats and grass seed, spreading on seventeen bushels of live ashes. I had a good crop of oats, and the next year one and a half tons best herds grass hay. The next piece of about half an acre, I cultivated in the following manner:—After enclosing it in a ditch, I began on one side and cut the turf into squares of about twenty inches in diameter each, piled them out of the way, and dug out the mud eight or ten inches deep, then cut out another tier of squares, turned them into the trench, dug down as before, and laid the mud on them, and in like manner until the piece was completed, taking out all the stumps, roots, &c.—the next spring planted it with potatoes, manuring about the same as common on upland; the potatoes yielding at the rate of three hundred bushels to the acre. After taking off the crop in the fall we leveled the mud, and in the winter carted on about twenty loads of gravel, ten of manure, and six of leached ashes. In the spring after, spread all as equal as possible, sowed oats and grass seed. The oats grew very large, as did the grass the next season. The method last mentioned I have adopted in cultivating the remainder of the old or cleared part of the meadow. Of the part covered with wood we measured off one acre, cut a large ditch round it, cut by the roots all the wood and brush, carried off the wood and stumps, burned the brush, carried on sixteen loads of manure, and in the spring following laid out the manure a suitable distance on the top of the swamp and planted it with the potatoes—raised three hundred and fifty bushels. After the crop was off, we leveled it, taking out all the roots near the top of the swamp, and sledded on ten loads of leached ashes; in the spring following, spread them, sowed on oats and herds grass seed. The oats grew very large, and lodged down early so they did not fill. The grass took well, and bids fair for a large crop next season. The remainder of the swamp I have cleared and planted in a like manner last season.

The expense of ditching, digging up, and turning an acre of the old meadow in the way above described, is about thirty-six dollars. The expense of cutting the wood and brush, from the acre above described, was twenty dollars. There were twenty-two cords of wood. I sold the wood, which paid for clearing. The profit of the potatoe crop, after paying the expense, was about twenty dollars. Four acres of this land, which by the way was all there was into grass then. produced the last season at twice cropping, as near as could be estimated, sixteen tons of good herds grass hay. Should it be asked if this land will continue to be thus productive, I answer, it will not, without manuring. It will want a top dressing once in about three years. A mixture of horse manure, loam and ashes, with the mud, causes a fermentation, and produces rapid vegetation. The object of the above description is two fold,—first, to answer the inquiry of numerous individuals, as stated above; secondly, hoping that it will come under the notice of some gentleman who has been cultivating this kind of land, who will be willing to publish the result of his experience; for I am fully of the opinion that this kind of land, when known, and properly cultivated, will be the most profitable we have.

John Conant.

Jaffrey, January 27, 1835.

Botanical Experiments.—Two young beech trees, planted in the same soil, at a small distance from each other, and equally healthy, were pitched upon as the subjects of the following experiments. They were accurately measured, and as soon as the buds began to swell in the spring, the whole trunk of one was cleaned of its moss and dirt, by means of a brush and soft water. Afterwards it was washed with a wet flannel, twice or thrice every week, till about the middle of summer. In autumn they were again measured, and the increase of the washed tree was found to exceed the other two to one.—*Brattleboro' paper.*

A faithful friend is the medicine of life.

COMMUNICATIONS.

LETTERS FROM A FATHER,

Living in the State of New York.

To his Son in Western Pennsylvania.

NO. II.

To my Son—I come now, in this my second letter, to treat of practical subjects. My first romark is, that in the practice of agriculture, it is a thing of primary and fundamental importance to have a good soil. By the soil is meant that stratum or layer of the earth which lies on the surface, and so much of it as is intermixed with decaying or decayed vegetable and animal substances. Its depth is usually from six or eight inches to twelve, and in some places it is much deeper. The subsoil is the stratum or layer of earth that lies next under the soil. I explain these terms, because I shall, in the progress of these letters, frequently have occasion to use them, and because the letters may be read by some to whom their import will not be familiar. The soil differs from the subsoil chiefly in having intermixed with it fine particles of decomposed or decomposing vegetable and animal substances, which have been accumulating there, it may have been, from the beginning. The color of the soil is generally darker than that of the subsoil, and it is rendered so by the intermixture of which I have spoken.

I have said that, in practical agriculture, it is a matter of primary and fundamental importance to have a good soil. To this it should be superadded, that it is of equal importance to have the soil in a good condition. If the soil is not good, or if it is not in a good condition, it should be made so, or be abandoned, and a better soil, or a soil in a better condition, be sought for. To persist in cultivating a soil that has proved itself to be incapable of producing enough to pay the expenses of cultivation, is folly in the extreme. There are indications by which the quality of soils can, in general, be satisfactorily known by inspection, but with these I will not perplex and burden your mind. In your case, and that of farmers in general, the test of experience will be conclusive and satisfactory. If by repeated and well tried experiments, the soil of your farm, or that of any particular field belonging to it, is found to be incapable of producing profitable crops, judgment must be rendered against it, either that the soil is not good, or that it is not in a good condition.

Having made these remarks, I come now to speak of your farm, and much of what I shall say will be applicable to many other farms in that vicinity. I deeply regret that I did not take greater pains than I did to make myself well acquainted with the distinguishing features of your farm, especially the texture of its soil and subsoil. I am aware that in adjudicating upon its merits, while my knowledge of its intrinsic character is so imperfect, I shall be in danger of judging incorrectly. Indeed, I cannot adjudicate in this case to my own entire satisfaction. Yet I venture to express an opinion favorable to the reputation of your farm, so far as the texture and quality of its soil are concerned. If I am able to judge correctly in the case, the soil of your farm, as to its texture and component parts, is good, deep, strong, inclining rather to sand, susceptible of easy tillage, and capable of being rendered highly productive.

Such are my views of your farm. Such too are my views of the other farms in your vicinity, and such, in general, are my views of all Western Pennsylvania, or rather so much of it as has passed under my observation. I have no doubt that Western Pennsylvania is destined to become, at a future day not far distant, highly respectable as an agricultural section of the country. It may not, indeed, be so happily adapted to the growth of wheat, as some other countries, and some other sections of our own country. But to the farmer there may be other objects than the growing of wheat, equally important and equally inducing. This, I trust, will appear in the progress of these letters. Nevertheless, Western Pennsylvania will, I think, become respectable as a grain growing country. It will become respectable for its excellent meadows and pastures, and for its numerous flocks and herds of superior domestic animals, which will be seen grazing and sporting *there* "on a thousand hills." It will become respectable for its mulberry plantations, and for its silk cocooneries, silk manufactories, woolen manufactories, and cotton manufactories. Surely there will be, in the progress of a few years, excellent roads and bridges in that country, and in all directions. In that country too, common schools, academies, colleges, and other seminaries of learning, will be multiplied, liberally sustained, and ably instructed, according to improved methods, in all the useful branches of literature. All the concomitants of a wealthy and thriving community will be found *there*, such as elegant mansion houses, superb and tastefully embellished country seats, &c. *There*, too, as I fondly hope and expect, many, *very many*, temples of religious worship, with their spires pointing Heavenward, will be built, and dedicated to the "King eternal, immortal, invisible, the only wise God." Such are the prospects of Western Pennsylvania. Its progress to these desirable attainments may be rapid. It will be more or less so, in proportion as the inhabitants of that country improve or misimprove their advantages.

Turning away with reluctance from visions so delightful, I must come back to the subjects of which I was treating, viz: the quality and condition of soils. I have spoken *well* of the soil of your farm, and of the soil generally in that part of the country in which you live. But here let me remark, that to have a good soil, and to have it in a good condition, are two things. A soil may be good, that is, be suitably composed of such ingredients as are necessary to constitute a good soil, and yet be unproductive, because it is not in a good condition. I regret to say, that in regard to a considerable portion of your farm, this qualification, so essential to productiveness, appears to be wanting. As I have seen your farm only at times when the ground was uncommonly wet, I may have taken incorrect views of it; yet I think I can scarcely be mistaken in my opinion, that several acres of your improved land are habitually too wet to be capable, in their present condition, of producing profitable crops. This remark applies chiefly to that part of your improvements which you call the windfall. I am satisfied, not only from my ocular view of that land, but from the specimen of crops that I saw upon some part of it, that in its present condition it is scarcely capable of remunerating the expenses of cultivation. *Here*, probably, we have an instance of a *good* soil, and yet of a soil that is not in a *good* condition, but in a condition so bad as to render it an unprofitable appendage to the farm. I can scarcely doubt, that the soil of your farm is intrinsically good,—good as to its texture and component parts—good also as to an abundant supply of decomposed and decomposing vegetable and animal substances. It is, probably, the very best soil your farm contains, and yet, from the habitual presence of superfluous water, it is rendered infertile—at least it is so as to the useful purposes of agriculture.

The evil here complained of is not altogether limited to your windfall, but it is apparent in some other parts of your farm. It exists to some extent in nearly the whole of your grass or meadow field lying south of your house. Nor is the evil of which I am speaking, by any means limited to your farm. It prevails to a greater or less extent on all, or nearly all, the farms in your vicinity. It prevails too in places more remote. If I am not mistaken, there is in your vicinity a large body of elevated lands, timbered in part with chestnut and oak, which will be found, in their natural condition, to be too retentive of water for profitable use in agriculture. Yet I have little doubt, the soil of these lands is intrinsically good.

Thus, my son, I have detected and exposed certain imperfections which I consider as attached to your farm, and to other farms in your vicinity. You will be anxious to know whether the evils here complained of admit of a practicable remedy. I think they do, and it will be the work of my next letter, to point out the methods of draining those wet lands, and thus rendering them fertile, and fit for any of the uses of agriculture. I have little doubt that these lands can be reclaimed from the deleterious dominion of water, and that too at an expense little to be regarded, when compared to the advantages to be gained.

A Father.

New York State, December, 1835.

FATTENING HOGS ON APPLES.

Mr. Tucker,—I send you the result of my experience of fattening swine on apples, although far from an accurate statement. I had about 400 apple trees, mostly sour, occupying about 10 acres of land—the trees have been planted from 20 to 25 years. I had 30 swine, and from 30 to 40 shoats and pigs—they were of the small Grass breed and in common order on or about the 15th September, at which time they were turned into the orchard, where they remained until most of them were butchered, which was the latter part of November and first of December. The whole amount of pork I am unable to state accurately, having used some in our family without weighing—probably 300 lbs. besides which I butchered 5,156 lbs. which was wholly fatted on apples *without any grain*.—The pork was as good as any I ever tasted, and I challenge any gormand to tell the difference between that and corn fed pork. Besides this,

I sold 12 dollars worth on foot, and have about a dozen store hogs in fine order.

What the value of the hogs were when I commenced fatting I am unable to state, but this I can say, that I never saw hogs fatten any faster than they do on good ripe apples, whether sweet or sour, although sweet ones are the best.

I would ask my farming brethren, who are in the habit of working their apples into cider, many of them at 75 cents per barrel, whether they are making better profits, or adding more to the comforts of their fellows, by so doing, and thus supplying a class of men with a drink as injurious as the worst distilled liquor in our country? This is the fourth time I have fatted hogs on apples and invariably with good success.

VAN BUREN.

Onondaga County, Dec. 1835.

From the Ohio Farmer.

Observations on the Action of Plaster of Paris, or Gypsum, on Vegetation and Vegetables.

Having given my opinion as to the operation of manures, I will now give my observations and ideas as to the action that Plaster of Paris, (i. e. Gypsum) has on vegetation and vegetables.

I am aware that there are various opinions as to its operation on plants. Some suppose it to act altogether by its septic qualities, and prepares various substances in the grounnd for the food of plants. This is believed by those who suppose that the nourishment of all vegetation is absorbed by the roots—others again say that it is one of the richest and most powerful manures known, without giving any reasons for their opinions, or the cause of its effects on the growth of plants, further than that it operates like all other manures that increase the growth of plants--others again, and I believe they are the majority, imagine that it attracts moisture from the atmosphere, which they believe is the cause of its acting on plants and vegetables.

My opinion is, that *gypsum*, by its septic qualities, causes a fermentation in the soil, and decomposes certain substances that may be in it, and that it causes a gas or vapor to arise which is the food of plants, and that by some chemical power that emanates from the action of the gypsum causes the plant to perspire, for there will be large drops of water on cabbages, and moisture on other plants, when there is no dew; or moisture in the earth for from one to two feet in depth.

In the year 1794 I sent from Philadelphia two tierces of ground plaster (*gypsum*) to my father, who then resided at Muncy in Lycoming county, Pennsylvania, on a farm. (This I believe was the first plaster sent to that part of the country.) I requested him to have it sowed or strewed in strips over a twelve acre field of clover, first to strew the plaster on a strip of four rods wide,and then to leave a strip of one rod wide without any plaster, and so on alternately over the whole piece. I also requested him to have plaster strewed over the cabbage and other vegetables on one side of the garden, (it was divided by a walk of six or eight feet wide,) and not to put any plaster on the other side of the garden—which he had done in the month of May,by plastering its northern side. Business on the waters of French creek and Alleghany detained me so that I did not arrive at home until somewhere about the 20th of August; and one of the first questions I asked my father was, how the plaster operated. He answered, wonderfully well—and that it attracted a great deal of moisture, and that the cabbages on the north side of the garden had large drops of water on the leaves every morning, while those on the south side, and where there was no plaster, had not a drop. There had then been, for about three weeks, no rain, and the weather was uncommonly dry, and no dew to be seen in the morning; and the strips where the clover was plastered were quite wet,as he thought, by the moisture attracted. But on the strips of clover that was not plastered there was no wet or moisture, and from appearances, we supposed that the plastered part would produce as four to one.

I attended to the garden and clover for several days, and from appearances, I conjectured that instead of attracting moisture, that it caused a perspiration in the plant. The weather was very dry, and no dews perceptible, which convinced me that I was right, and in all that time Fahrenheit's thermometer was not seen below 79 degrees--and in the middle of the day it ranged from 84 to 88 degrees. I then had several holes dug a foot and more deep, and the ground was as dry as dust, therefore no moisture could rise out of the earth, and as the sky was clear day and night, there could no moisture be attracted out of the atmosphere by the plaster. I suppose that the sulphur in the plaster, by some chemical operation in the earth, acts upon the plant or vegetable so as to cause it to perspire and preserve it in health, and which causes it to grow. In the year 1796, I had also an opportunity of seeing the operation of the plaster as above described, and with the same effect. Afterwards, when I lived near Haverdegrace, in Maryland, in the year 1799, I had the experiment fairly tried by a very skilful gardener that I then had, and the late Col. Timothy Mattack, of Philadelphia, spent that part of the summer with me that the yellow fever prevailed in that city—and he was also convinced that the plaster operated by causing a perspiration in plants, and all vegetables that it operated on. The Colonel was a man of talent and observation, and was famous for the cultivation of carnations and other flowers, and he was supposed to know as much about the operation of manures as any man.

The late Joseph Cooper, of Cooperspoint, opposite Philadelphia, and who had been (when I was acquainted with him) a practical farmer between fifty and sixty years, and who was a man of talent, observation and experiment, had great faith in Col. Mattack's opinions respecting manaures—and I have known Mr. Cooper to send to the Colonel, barrels and parts of barrels of earth or mud formed by the tide of the Delaware river, to be experimented on and analyzed by the Colonel.

The Colonel, before he could be satisfied, had holes dug in my garden and fields, about two feet deep, and found the ground perfectly dry. Fahrenheit's thermometer, for near or about a month, was not lower, at sunrise, than 81 degrees,and in the course of the day it generally ranged from 84 to 90 degrees, but more frequently to 87 to 88. The vegetables in the garden and the clover in the fields that were plastered, were invariably wet in the mornings at sunrise, when the fields not plastered had no moisture on them. This satisfied the Colonel that I was correct in my opinions respecting the perspiration caused by the plaster.

The above is written for the plain practical farmer and gardener; I have therefore avoided using any technical phrases or hard words, such as carbon, carbonic acid, nitrogen, oxygen, hydrogen, phosphorous, &c. &c., very few of which are to be found in our dictionaries now in use, and cannot be of any use to the plain practical farmer or gardener.

I now leave these pieces with the public as they are, and at what they may be worth, and I have a hope that they may lead to inquiry and experiment in search of a great desideratum—i. e. to find out the nearest quantity of all manures that are in use, to be applied to the various soils of our *country*, so as to have the best effect on all vegetation. Too little is of little or no account, and where there is too much applied, I have known wheat, rye, oats, &c. fail, and instead of grain, have a great crop of straw, with light and shriveled grain, and small in quantity; and also Indian corn, by using too much manure in a dry season, where the ploughing was not of a sufficient depth and not worked very often.

JOHN ADLUM.

P. S. Having shown the above piece to my friend the Hon. Mr. Barnitz, of the House of Representatives of the United States, when he communicated to me a circumstance that I never before heard of, or ever saw mentioned by any author, viz: that certain trees do grow and increase in size during the winter season, particularly Apricots, Mulberries, &c., whose diameter increases, and of course their circumference. This is new to me, and no doubt to the community in general. As he is a gentleman of genius and observation, as well as a practical *Agriculturist* and *Horticulturist*, his ideas and opinions are deserving of great weight with the public—and though some trees do increase in size, all may not do so. I therefore throw out this hint, that farmers, gardeners, gentlemen of leisure and others, may attend to this circumstance, and when they satisfy themselves of the fact, it will be time enough to examine into the cause of it.

J. A.

From the Edinburgh Q. Journal of Agriculture.

On Rot in Sheep.

The attention of your readers having again been called to the internal rot of sheep, I would humbly offer the following remarks to their consideration, hoping that they may be of some use in leading either to a prevention or cure of that distressing disease which has been the means of ruining so many of our poor farmers, and perhaps of injuring the health of many of our people,who have been fed with unwholesome mutton. I first, then would recommend your readers to read a small book published in 1823, at Berwick-upon-Tweed, by a Lammermuir farmer,* not that I agree with him as to the cause of the disease, but he gives many interesting facts and useful hints. He supposes that the rot is occasioned by feeding in a luxuriant after-growth of grass, but I have yet to learn that a luxuriant after-growth of clover occasions this disease. The fact I believe to be, that it is some particular plant which affects the animal. It is surely no longer believed that it is wet or cold; for if a ewe, when giving milk, does not suffer, is she more likely to escape the effects of cold than another sheep? But I believe it is admitted by medical men, that women giving milk are not so apt to suffer from poison as other persons; so also with sheep. I am inclined to believe that the butter-cup (*Ranunculus,*) is the plant which is the cause of the mischief. Green in his Universal Herbal says, that all the parts of this plant are exceedingly acrid. In the Isle of Sky, it is used instead of Spanish flies to raise a blister. Curtis states that when cattle are tempted or forced to eat it, their mouths become sore and blistered; and, according to Linnæus, sheep and goats eat this plant, but cattle, horses and even pigs, refuse it. Geese also eat it. Now, sheep and geese are more apt to have enlarged or diseased livers, than any of the other graminiverous animals that I am acquainted with.

But to return to the Lammermuir farmer. He recommends salt as a decided cure for this disease. The dose is 1½ ounce of common salt, given in ¾ths of an English pint of water, to a sheep, with an empty stomach, for three or four mornings. Limewater is also good. I have seen both given: and, on killing the sheep that had two doses of the salt, there were about 160 flukes taken out of its liver, most of which were dead. But as a preventive is better than a cure, I would call your attention next to White, that close observer of nature. He says in his Natural History of Selborne, that "worms seem to be the great promoters of vegetation, which would proceed tamely without them, by boring, perforating, and loosening the soil, and rendering it pervious to rain and the fibres of plants, by drawing straws and the stalks of leaves into it; and, most of all, by throwing up such infinite numbers of lumps of earth." Again he says, "that the earth without

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* This is an excellent practical treatise on the management of sheep in upland pastures. Its author, the late Mr. John Fairbairn of Hallyburton, we had the pleasure of knowing well; and many will bear us out when we state that no Lammermuir farmer could show a better flock of Chevoit sheep than he had.—*Ed. Q. J. A.*

worms would soon become cold, hard-bound, and void of fermentation." But more applicable still to the case of your correspondent, in p. 232, where he says, "Lands that are subject to frequent inundations are always *poor*, and probably the occasion may be, because *the worms are destroyed*." Now, I observe from your correspondent's remarks, p. 503 of vol. v. of your Journal, that his meadow, although well laid down in grass, soon appeared *starved*, after having been irrigated: so it is well worth his examining whether or not the *worms have been destroyed* by frequent irrigation? If so, I have no doubt he has got rid of the moles also, as the latter feed chiefly on the former. The Ettrick Shepherd says, vol. ii. p. 700 of your Journal, that it is his opinion, as well that of shepherds, that the extirpating of moles, or doing away with mole-hills, was the primary cause of the disease among sheep, known by the name of pining. Now, the conclusion to which I have come in my own mind is, that earth is necessary for the general health of sheep, be it in the shape of mole-hills or worm-casts. True it is, that there are no moles in the sister island Old Ireland, and the sheep there are in general, I believe, sound, but there must be plenty of worm-casts. Your correspondent strengthens me in this opinion, that earth is good for sheep, when he states that folding them occasionally in fallow, is sometimes a means of preventing the rot.*

I watered a field of old grass in the summer 1833, which I stocked chiefly with sheep, and I found they soon became all tainted, although those of a neighbor from the same breeder were perfectly sound. The shepherd, who had known my field for many years, said that he was not aware that sheep had ever suffered in the field before from the rot; and I now think it very probable that I erred in not stocking the field sufficiently, thus by the length of the grass preventing the sheep from getting at the worm-casts or other earth. It occurs to me, that one reason why the disease of the rot is more common in England than in Scotland is, that they do not feed their grass so close as we do. Besides, they do not clean their fallows so well, and have more butter cup, having older and richer pasture. The meadows in the neighborhood of your correspondent are entirely new, so perhaps the worms are not yet destroyed, which may account for no rot being in these pastures; and those that are watered by other streams may perhaps be supplied with mud or earth from such streams.

It is a custom at the Duke of Montrose's, and with others who feed pigs, to give them occasionally ashes or cinders; and as a pig is very apt to overeat itself, and to take all sorts of mixtures, it ought always (when prevented by confinement from getting at the field) to be provided with some alkali, to correct the acidity in its stomach. I had some time ago a large fat hog, which was confined, and kept very clean, getting nothing to eat but meal of various kinds, with milk; and just about the time I intended to kill it, I was prevented by its becoming very costive and unwell. I did not know how to administer any opening medicine to so strong an animal, but in turning it out of the sty, I found it began to eat earth and lime; I therefore immediately mixed some magnesia with milk, and it soon took a sufficient quantity of it. I would also mention, that when the root of the bitter cassava is given, in the West Indias, *washed* to pigs, it kills them, but when they make their way into the provision grounds, and take plenty of earth with this root, it has apparently no bad effects on them.

It ought to be generally known whether potatoes, when given raw to his pigs or cattle, should be washed. I know not what is the best corrective for the poison of the solanum family, but an alkali is given to counteract the bad effects of meadow saffron and prussic acid. At all events some earth may be the means of preventing swelling in cattle, when feeding either on turneps or potatoes.† I remember a butcher in the West Indies telling me, that he found cattle which were fed in pastures, through which a pure running river passed, had their livers always disased, while those cattle which had water to drink out of filthy stagnant ponds, in which they stood for many hours in the day, had their livers quite sound. He and I both thought at the time, that it was the difference of temperature in the water, but I am now inclined to think that the earth was the means of keeping the liver sound. I hope these few remarks may be of some use to your correspondent, or may be the means of drawing out some information from others. Whether the rot is occasioned by some particular plant, or by a luxuriant after-growth occasioning a fermentation in the stomach of the animal, my firm conviction is, that salt or earth, or both, are of use to graminiverous animals, as grass is occasionally to cats and dogs. Every observer must have seen horses eagerly chewing the roots of grass with earth, and grooms are aware that it is a bad sign of the state of the horse's stomach. Chalk is given to calves, and lime or shell gravel to fowls.

I would now ask, what takes place if a sheep eats some earth? Does it not absorb the acid in its stomach and form a salt, thus in part agreeing with the recipe of the Lammermuir farmer? He mentions a striking fact (in his book before referred to) that the shepherds in Spain, while feeding their flocks on land with lime stone, do not give salt to their sheep, but have occasion to do so when feeding them on any other soils; which I account for by the lime correcting the acidity and forming a salt. I may here mention the way in which salt is given to sheep in the West Indies; a large cask without ends is laid upon its side on the ground, a small hole being dug for the swell of the cask; four stobs or stakes are then driven into the ground, two on each side of the cask, to keep it steady; the salt is then put into it, and so protected from the rain. Those who give salt in this way, and feed their pasture close, so that the sheep can get at the worm-casts, need not, I think, be much afraid either of the internal or foot-rot.

I have thus attempted to say a word in favor of the worm, as the kind-hearted Ettrick Shepherd stood forward in defence of the mole, rook and wood pigeon. I recollect destroying almost all the vermin in a large district of country in Perthshire, with a view of increasing the game; but the rabbits multiplied to such an extent as to become an immense nuisance. By the way, may not the increase of field-mice in a district in France, mentioned in the miscellaneous notices of your last number but one, be accounted for in the same way. I would recommend to them a large importation of owls. If man sets his wisdom in opposition to the all-wise Lord of the Universe, and destroys in a small degree the balance of creation, every thing suffers from it. We are indeed wonderfully connected together; yes, the meanest and most groveling animal is needful for the well-being of the whole. S. W.

* Buckbean (Menyanthes), Class 5, Ord. 1, is said to be a cure for the rot in sheep.

† A *large* quantity of earth, particularly in wet weather, eaten with turneps or potatoes, will cause cattle to scour—a *small* quantity will not; but scouring prevents swelling from either root.—*Ed. Q. J. A.*

Water for Sheep in Winter.

We said something on this subject last winter. Many farmers suppose that sheep will do well without water in the winter, if they have plenty of snow; but this is a great mistake that should be corrected without delay. We have known many cases of sheep having free access to good water in winter, and in such cases they drink twice as often as cattle or horses that have the same opportunity of drinking when they please. This fact plainly demonstrates that sheep will do better on good water than on snow, and the superiority of those flocks that have access to water, is another positive evidence. Some farmers suppose that sheep will not frequent a watering place unless it be very near; but we have known instances of their going regularly to water a considerable distance, and we doubt not they would go of their own accord as horses or cattle, if they were *invited*, or mildly urged, a few times to the water and fed there, with salt, corn, potatoes, &c.

Let evry farmer who neglects to furnish his sheep with water in the winter season, try the experiment we have recommended, and we doubt not that the improvement in his flock will amply compensate him for his pains.—*Yankee Far.*

From the English Farmer's Magazine.

On Breeding Horses.

The following is extracted from a communication to the Editor, by T. A. Knight, Esq. at Downston, Herefordshire—"Having introduced for the use of my tenants a high priced stallion, of the breed of the large London dray horse, I wish to state to agriculturists the grounds upon which I anticipate much advantage from the introduction of so large an animal. He will, I have reason to believe, be, when full grown, not less than seventeen hands high, and very compact in form.

"I conceive myself to have proved, by many experiments, of a part of which an account was published some years ago in the Philosophical Transactions, that the length of legs of the offsprings of all those animals which nature has intended to accompany their parents in flight, at an early age, is governed wholly by the habit of the female parent. This tribe of animals comprehends the horse, the cow, the sheep, and deer, and many others. If the female parent be of low stature, and descended from a breed of a similar form and size, the length of the legs of the offspring will be short, and will not be increased in length, though they will in strength, by any influence of its male parent, however tall and large that may have been; and the converse of this proposition will be found equally true.

"The experience of almost every farmer must have taught him that horses with drop shoulders and bodies, and capacious chests, are more capable of bearing hard and long-continued labor than those of whichthe shoulders, and of course the chests, are shallow and the legs long; but comparatively few know how rapidly the powers of draft in any animal mechanically decrease with the length of the legs, comparatively with the depth of the shoulders and body. If a horse, proportioned as English horses now generally are, be sixteen hands high, his fore legs, measured from the elbow joint, will be about three feet, or nine inches high, and his shoulder about two feet four inches, or seven hands high. If such a horse be able to raise, by means of a cord passed over a pully, a weight of a thousand pounds, another horse similar to that in every other respect, except that of having its legs eight inches shorter, would, on account of mechanical advantages of its form be able to raise twelve hundred and fifty pounds, or one-fourth more, with considerable less exertion; for his power would increase with the diminished length of his legs, nearly in the same proportion as the power of the weights upon the longer arms of the steelyards is increased by being made to recede from the points of suspension; and if the length of such horse, comparatively with the depth of the shoulder, were further diminished, its power would increase in an accumulating ratio. The enormous strength of a bull of mature age, affords familiar evidence of the truth of these positions; and I doubt much whether the offspring of a Norwegian pony, and a strong and low draft mare would not be found capable of drawing a heavier weight up hill, to any considerable distance, than the largest horse of the ordinary form and proportion; whilst it would not, probably, exceed two-thirds of its weight, nor require more than two-thirds the quanty of food; and it would possess much more activity, and be much less subject to accidents. And I have good reason to believe that more perfect animals, for supplying mankind with food, may generally be obtained by cross-breeding from females of small, and male animals of large size, than from any breed of fixed and permanent habits, relative to size."

From Loudon's Magazine.

A Description of a mode of Cultivating ONIONS.—BY MR. WM. WHIDDEN.

Sir—Your correspondent, John Mitchel, jun. treats on the culture of the Onion. I write not to dissuade him from following the plans which his own observation has suggested to him, but to state my own experience on this subject, as it differs widely from his. In March 1830, I lived as gardener to J. B. Praed, Esq. of Tyringham, Bucks, and, having occasion to make an asparagus bed, I resolved upon sowing onions, of the Deptford sort, in drill between the rows. The ground was not prepared in the way usual for asparagus, but turned over to the depth of one spade only. The soil being of a tenacious and cohesive quality, I used a quantity of coal ashes and rotten dung, and all being in readiness for the asparagus, I proceeded to plant it in rows eighteen inches asunder, and the onions in drills between these rows. I finished each row as I proceeded, which caused a great deal of trampling, and the ground was remarkably hard after the whole was completed. When the crops began to grow, I thought of hoeing, thinning, etc.; but, being a native of Northampton, where some of the best onions in the kingdom are grown, I recollected seeing, at different times, onions growing in hard walk, and these the best samples of a whole acre. I accordingly resolved to let my crop take its chance. Weeding and thinning were performed by the hand, which greatly increased the solidity of the soil.

My crop was pulled up without attention being paid to any particular time or form; the onions composing it were sound and good, while the crops of my neighbors were suffering from what are termed mouldy-nosed onions. I had several bushels from a small piece of ground, and was obliged to exchange with my neighbors for pickles. I presented Mr. Atkins, nurseryman of Northampton, with twelve which weighed eleven pounds. I planted twenty-four of them the succeeding spring, for seed, which weighed nearly twenty two pounds, and were shown to several friends before they were planted, who can testify the fact. I cannot say what quantity of seeds they produced, as I left my situation at that time.

A great deal has been said about growing large onions; but, according to my humble opinion, large onions are not the most desirable. From my experience, (which, I confess, is not a lengthened one, as I am but a young gardener,) an onion from one to two inches diameter is the most profitable, of the readiest sale, and the best for gardeners and gentlemen. When a large onion goes into a gentleman's kitchen, it is cut and a part only used; and the remainder loses its quality, and ultimately bears company with the peelings to the dung heap.

I advise John Mitchell, if he wishes for large onions, to try as I have suggested above. His soil will suit every purpose. He will find an advantage in time; run no risk in displacing the roots, which is apt to check vegetation; and he will not be so likely to get disease in the crops as the trampling forms gutters in which he can, if dry weather occur, put water, and supply the roots more gradually with moisture; or, if a continuance of rain should happen, these gutters will carry off the superfluous water.—*Chicheley Hall, Bucks.*

MANAGEMENT OF MANURE.

The manure heap is the farmer's gold mine, and on this he must place his chief reliance. A difference of opinion, as well as a diversity of practice, prevails relative to the state or condition of the manure previous to its application to the soil, that is, whether it is most useful to apply it in its raw state, without subjecting it to the process of fermentation, or whether it will produce a greater effect by previous decomposition—by being thoroughly rotted. In some parts of our state, the manure made in winter is considered as unfit for the soil, till the subsequent autumn, and among us it is a common practice to deposit the manure in large heaps, on the field where it is to be used, with the intention that it shall go through a partial fermentation. I have frequently adopted this practice, in imitation of those whom I considered among our most judicious farmers. But experience, observation, reflection, and attention to the observations of others, have convinced me, that every degree of fermentation in manure designed for ploughed land, is absolute waste. True, the decomposition must take place before it can be taken up as food for the plants, but then this process may be carried on in the soil, while the seeds are vegetating and putting forth their roots and blades, with equal advantages, and by their gradual decay, fresh food will be furnished to the plants, as they advance in their growth, and when this takes place beneath the ground, there is a great saving of the strength and nutritious power of the manure. Whoever has stood to the leeward of a dung heap, when in a state of fermentation, and witnessed the evaporation, and perceived the strong effluvia escaping from the heap, must have been impressed with the fact that no small portion of its strength and virtue is passing off into the air. That which thus escapes, is the most subtile and nutritive part, the most enriching to the soil—it is that which imparts the most life, activity and vigor to vegetation. Now this ammonia may be wholly retained within the soil. By ploughing in the manure before the fermentation takes place, there will be comparatively but a trifling evaporation. The fermentation and putrefaction will ensue, but the small and subtile particles which would escape from the dung heap, are now retained in the soil and become incorporated with it. Economy requires that the plough should be put in motion as soon as is practicable, after the manure is carried into the field. Even the moisture in the manure when it is carried out, is in itself some of the richest part of the load, and the longer it is suffered to lie in the sun, before it is ploughed in, the greater the diminution of its strength and value.—*Lathrop's Address.*

CULTIVATION OF FRUIT.

As to the matter of profit, I would inquire in what manner an acre of ground, in the ordinary course of cultivation, can be made so profitable as in the cultivation of fruits. Good fruits will always find a good and ready market. After the trees are set out the ground may be cultivated for many years, with little or no injury to the crop, and with great benefit to the trees. The trees, themselves will require little other labor than pruning, and this requires one day annually. If the fruit be judiciously selected it would sell in the market for more than the whole crop of corn, potatoes or grain, and pay for gathering and marketing. Even in the Newburyport market, good peaches will bring from three to four dollars a bushel, cherries and plums from four to five dollars, pears from one dollar fifty cents to two dollars, and apples one dollar a bushel. Take for instance a premium crop of corn or any other grain, after deducting labor, &c. fifty dollars would be a liberal amount for profit, and yet I cannot but think an acre of good fruit would yield a profit of four times this amount.

Fruit is also one of the greatest luxuries which God, in his providence has given to man. Have you not been at the festive board loaded with all the dainties which wealth and taste could collect from this and other climes? And have you not seen that those ripened in our own sunshine have always been preferred? What foreign fruit can compare with the mellow blushing apple, the luscious pear, and the peach which fills the room with its fragrance? And yet all these we may have with very little labor and very little expense. If I am told that accidents often attend the cultivation of fruit, which disappoint our expectations, I would inquire what crop of the farmer is not liuble to accident? Frost, and drought, which often injure fruit, are no less injurious to the tillage crops.

Ripe fruit also contributes greatly to health. I have seldom known a family of children, accustomed to the daily use of ripe fruit, who have much occasion for a physician. It prevents in both old and young, dysenteries, cholics, and various other ills which flesh is heir to, and gives the form of health and strength so essential to our happiness. This is a cheap medicine, much cheaper than that presented by a physician, which we must pay dearly for, and his visit beside.

Every farmer should be well acquainted with the operations of grafting and budding. It is an art attended with no difficulty and may be learned in one hour. A little practice will enable any person to perform the operations with great rapidity and success. I deem a knowledge of these simple arts so important, that I would make the knowledge of them an essential part of a young gentleman's education.

The peach is probably the most short lived tree of all our fruit trees, but it is renewed with very little trouble. Plant a peach stone in the place where you want a tree to grow, and it is very sure to come up and flourish. The better way is, however, to have a nursery. Take a few feet of ground in the garden, and in the fall plant a number of stones. At two years' growth the tree may be budded with fruit which you know to be excellent, and in the fall of the year the tree may be transplanted to the place where you wish it to stand. Let it have a southern aspect, at the south side of the house or barn, or on the south side of a hill, and it will for several years produce fruit abundantly, which will repay all your labor and trouble. When it decays let it be renewed by another. In the same manner other fruit trees may be produced.—*Moseley's Address.*

It is an unpleasant thing to love, when we have not fortune great enough to render those we love as happy as they can desire.

List of Payments

For the Farmer from Jan. 5, to Jan. 9, 1836.

For vol. 6.
Peter R. Skinner.
C. Hastings.
Israel Skinner.
James M'Kirdy.
Arvin Rice.
B. F. Stone.
W. R. Macao.

For vol. 5.
Donald Douglas.
Peter O. Carr.
Loring Hedges.
James Harris.
July, 1835, to July, 1836.
Alex. Williams.
Joseph Williams.

Last half of vol. 5.
Aaron Reed.
James Holloway.

For vols. 4 and 5.
Wm. Chamberlin.
Jacob Sawyer.

For vols. 5 and 6.
Major Rooth.
Thomas Hutchinson.

For vols. 5, 6, and ½ of 7.
John Bowman.
Asa Schooley.

James Blaney, vols. 1, 2, 3 and 4.
James Park, vols. 2, 3 and 4.
David Buchan, vol. 6, and ½ of 7.
Lewis Porter, from No. 36, vol. 5, to 36, vol. 6.
Benj. Pound, vol. 5, and ½ of 6.
David Stickney, Jr. 1st ½ of vol. 6.

Seed Corn.

THE subscriber has a quantity of the celebrated 12 rowed Dutton Corn, raised by J. Buel. The advantages of raising this corn are its prolific qualities, being easily made to yield from 70 to 80 bushels to the acre, and itsearly maturity, ripening in about 100 days from time of planting.

W. THORBURN, Seedsman,
347 N. Market-st. opposite Post Office.
Albany, Dec. 25.—j9

1000,000 Silk Worm Eggs, FOR SALE.

THE subscriber having promised to supply so many individuals who called to see his worms at work last year, and he having already sold so many, deems it proper to advise those who have not yet received any, and are intending to have some, that they must order them at once, or possibly they will be disappointed, the demand being so great, and this being the proper season to forward them. They are sold for 25 cents a thousand. Orders enclosing the amount will be punctually attended to.

JAMES HOUGHTON.
Rochester, Jan. 7, 1836. j7r3m

PHILOSOPHICAL FACTS.

The change of properties which takes place when chemical attraction acts, is not confined to metals, but is a general result in every case where different bodies are brought into this state of combination or chemical union. Frequently we find that the properties of each body are totally changed; and that substances, from being energetic and violent in their nature, become inert and harmless, and *vice versa*. For instance, that useful and agreeable substance, culinary salt, which is not only harmless, but wholesome, and absolutely necessary to the well-being of man, is composed of two formidable ingredients, either of which taken into the stomach proves fatal to life: one of these is a metal, and the other an air—the former is called *sodium*, the latter *chlorine*. When presented to each other, the violence of their nature is manifested by their immediately bursting out into flame, and instantly they are both deprived of their virulence. Can any thing be more striking than the change of properties in this case; and who could have supposed that culinary salt is composed of a metal united to an air! The medicine called Glauber's salt is another instance: it is composed of two caustic poisons of different kinds; one called oil of vitriol, and the other barilla or soda. There are also two substances known to chemists, which are disgustingly bitter liquids: one is called nitrate of silver, and the other hyposulphate of soda; when mixed they form a compound of considerable sweetness. But the atmosphere which we breathe is the most extraordinary of all instances: it must be surprising to those who are unacquainted with the fact, that atmospheric air, indispensible as it is to life, is composed of the same ingredients as that most violent and destructive liquid called *aqua fortis*, or nitric acid. This powerful acid being made to act upon sugar, the sweetest of all things, produces a substance intensely bitter to the taste. Charcoal is, of all known substances, the most difficult to convert into vapor; so much so, indeed, that the conversion has never yet been decidedly effectual: it is also a very solid substance; and diamond, which is nothing but crystalized charcoal, is one of the hardest bodies in nature. Sulphur, in the solid state, is also a hard substance, and to hold it in vapor requires a high temperature. But when these two substances, carbon and sulphur, are made to combine chemically, so as to form the substance called bisulphuret of carbon, their properties are strikingly changed. Instead of the compound being hard, it is a thin liquid, and is not known to freeze or solidify at any degree of cold that can be produced. Instead of the compound being difficult to vaporise, it is, of all liquids, one of the most evaporable. Charcoal is the blackest substance with which we are acquainted—sulphur is of a most lively yellow hue; but the compound is as colorless as water. A new smell and taste are acquired, and, in a word, there is not one point of resemblance with the component. These facts are strikingly illustrative of the change of properties which follow on the exertion of chemical attraction between the ultimate particles of bodies.—*Donovan's Chemistry.*

EDUCATION.

The most essential objects of education are the two following:—First, to cultivate all the various principles of our nature, both speculative and active, in such a manner as to bring them to the greatest perfection of which they are susceptible: and, secondly, by watching over the impressions and associations which the mind receives in early life, to secure it against the influence of prevailing errors; and, as far as possible, to engage its prepossessions on the side of truth. There are few individuals, whose education has been conducted with attention and judgment. Almost every man of reflection is conscious, when he arrives at maturity, of many defects in his mental powers; and of many inconvenient habits, which might have been prevented or remedied in his infancy or youth.

If the business of early education were more thoroughly and more generally understood, it would be less necessary for individuals, when they arrive at maturity, to form plans of improvement for themselves. But education never can be systematically directed to its proper objects, till we have obtained, not only an accurate analysis of the general principles of our nature, and an account of the most important laws which regulate their operation; but an explanation of the various modifications and combinations of these principles, which produce that diversity of talents, genius, and character, we observe among men. To instruct youth, in the languages, and in the sciences, is comparatively of little importance, if we are inattentive to the habits they acquire; and are not careful in giving, to all their different faculties, and all their different principles of action, a proper degree of employment. Abstracting entirely from the culture of their moral powers, how extensive and difficult is the business of conducting their intellectual improvement! To watch over the associations which they form in their tender years; to give them early habits of mental activity, to rouse their curiosity, and direct it to proper objects; to exercise their ingenuity and invention; to cultivate in their minds a turn for speculation, and at the same time preserve their attention alive to the objects around them; to awaken their sensibilities to the beauties of nature, and to inspire them with a relish for intellectual enjoyment;—these form but a part of the business of education; and yet the execution even of this part requires an acquaintance with the general principles of our nature, which seldom falls to the share of those to whom the instruction of youth is commonly entrusted.—*Dugald Stewart.*

Science.—Science, the partizan of no country, but the benificent patroness of all, has liberally opened a temple where all may meet. Her influence on the mind, like the sun on the chilled earth, has long been preparing it for higher cultivation and farther improvement. The philosopher of one country sees not an enemy in the philosopher of another: he takes his seat in the temple of science, and asks not who sits beside him.

I hope it will be written on the tablets of your heart, in characters not to be effaced by ambition, avarice or pleasure, that the only sure and certain happiness to be found on this side of the grave, is a consciousness of your own rectitude. All peace and homefelt joy are the reward of virtue. And there is no applause in this world worth having unless it is crowned with our own.—*Sir J. E. Wilmot to his Son.*

Extract.—I am acquainted with a great many very good wives, notable, and so managing, that they make a man every thing but *happy*—and I know a great many others, who sing, and paint, and play, and cut paper, and are so accomplished that they have no time to be *agreeable*, and no time to be useful. Pictures, and fiddles, and every thing but agreeableness and goodness, can be had for money; but as there is no market where pleasant manners, and engaging conversation, and christian virtues, are to be bought, methinks it is a pity the ladies do not oftener try to provide them at home.—*H. Moore.*

The Farmer.—It does one's heart good to see a merry round-faced farmer. So independent, and yet so free from vanities and pride. So rich, and yet so industrious; so patient and persevering in his calling, and yet so kind, social and obliging. There are a thousand noble traits about him which light up his character. He is generally hospitable—eat and drink with him, and he won't set a mark on you, and sweat it out of you with double compound interest, as some I have known will: you are welcome. He will do you a kindness without expecting a turn by way of compensation: it is not so with every body. He is generally more honest and sincere—less disposed to deal in a low and underhand cunning, than many I could name. He gives to society its best support; is the firmest pillar that supports the edifice of Government; he is the lord of nature. Look at him in his homespun and gray back—gentlemen laugh if you will—but, believe me, he can laugh back if he pleases.

Avoid all low company—in parts, in manners, and in merit.

A man who does not possess a particular talent, satisfies himself by despising it; he removes this obstacle which stands between him and merit, and by this means he finds himself on a level with him whose labors he is afraid of.

A great woman not imperious, a fair woman not vain, a woman of common talents not jealous, an accomplished woman who scorns to shine—are four wonders just great enough to be divided among the four quarters of the globe.